

FRONTLINE SAFETY CASE STUDY



CARBON DIOXIDE & METHANE

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WHAT WAS THE HAZARD?

A chocolate manufacturing site in the UK was facing safety concerns due to the use of gases during the manufacturing and storage processes. Methane (CH₄) and carbon dioxide (CO₂) were commonly used in these processes, and their leaks could lead to potential fire hazards, equipment malfunctions, and health risks for workers. To ensure safety, monitoring for undetected gas leaks was crucial.

AT A GLANCE

Challenges

- Multiple leak points.
- Previous incidents of minor gas leaks
- The necessity to detect a variety of hazardous gases.

Benefits

- Early detection and rapid response to any leaks
- Comprehensive coverage of the entire site with 35 points.
- Enhanced worker safety and confidence in the site's safety

A close-up photograph of a chocolate manufacturing process. A thick stream of molten chocolate is being poured from a metal spout onto a metal grate. The chocolate is spreading across the grate, creating a smooth, glossy surface. The background is slightly blurred, showing more of the industrial machinery.

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PROBLEM IN MORE DETAIL

Methane, though primarily known as a natural gas, is used in certain heating processes and can be found in boiler systems. A methane leak is particularly concerning due to its flammability. On the other hand, carbon dioxide is widely used in the food industry, especially in chocolate manufacturing, for its preservation properties and the carbonation of beverages.

While CO₂ is a natural component of the atmosphere, in concentrated amounts, it can displace oxygen, leading to an oxygen-deficient environment. Such an environment can cause dizziness, unconsciousness, and even death in severe cases. Given the high stakes, the chocolate manufacturing site required a state-of-the-art gas detection system to ensure the safety of both its employees and equipment.

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WHICH SOLUTION AND WHY?

At our client's site, we recognised the critical need for gas safety. Even in volatile settings, we ensured a steadfast response by implementing Crowcon's Xgard Gas Detector, installed at a couple of detection points for CH₄ and CO₂. The Gasmaster Control Panel, with the capability to monitor up to four channels, the Gasmaster can seamlessly collate data from multiple Xgard detectors. Its standard Modbus RTU integration allows for straightforward interfacing with other systems, making it a versatile addition to any setup. Its diverse output options, ranging from mV bridge and 2-wire 4-20mA to 3-wire 4-20mA, relay, and Modbus, offer unparalleled flexibility to cater to the specific requirements of any site.

Moreover, its efficient functionality across a temperature range of -20°C to +55°C assures reliability amidst variable conditions. One of the Gasmaster's standout features is its potent alarm system. Not only does it provide visual alerts on any anomalies, but its 85dB audible alarm guarantees immediate attention.